

REPORT NUMBER: 301-MGA-2009-003

**SAFETY COMPLIANCE TESTING FOR
FMVSS NO. 301
FUEL SYSTEM INTEGRITY**

**BLUE BIRD BODY COMPANY
2009 BLUE BIRD MICRO BIRD SCHOOL BUS
NHTSA NO.: C90902**

**PREPARED BY:
MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105**




TEST DATE: JUNE 9, 2009

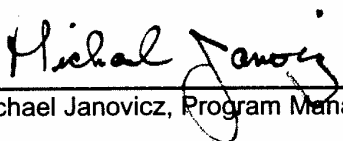
FINAL REPORT DATE: AUGUST 20, 2009

FINAL REPORT

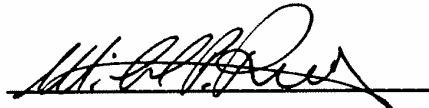
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8/20/2009
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Technical Report Documentation Page

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16. Abstract A compliance test was conducted on the subject 2009 Blue Bird Micro Bird School Bus, NHTSA No. C90902 in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-301-04 for the determination of FMVSS 301 compliance. Test failures were as follows: None			
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TABLE OF CONTENTS

<u>Section</u>		<u>Page No</u>
1	Purpose of Compliance Test and Summary	1
2	Compliance Test Data	2
	Data Sheet 1 - School Bus Data	3
	Data Sheet 2 - School Bus Impact Data	5
	Data Sheet 3 - FMVSS 301 Static Rollover Data	7
3	Instrumentation and Equipment List	8
4	Photographs	9

SECTION 1
PURPOSE OF COMPLIANCE TEST AND SUMMARY

A fuel system integrity test was performed on a MY2009 Blue Bird Micro Bird School Bus, NHTSA No. C90902, in accordance with the specifications of the Office of Vehicle Safety Compliance (OVSC) Test Procedure TP-301-04, to determine compliance to the requirements of Federal Motor Vehicle Safety Standards (FMVSS) 301, "Fuel System Integrity".

Based on the test results, the MY2009 Blue Bird Micro Bird School Bus, NHTSA No. C90902, appears to meet the requirements of FMVSS 301 testing.

This program is sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-08-D-00075.

SECTION 2
COMPLIANCE TEST DATA

The following data sheets document the results of testing on the MY2009 Blue Bird Micro Bird School Bus, NHTSA No. C90902.

DATA SHEET 1
SCHOOL BUS DATA

Test Vehicle: **2009 BLUE BIRD MICRO BIRD SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C90902**
Test Date: **06/09/2009**

GENERAL VEHICLE IDENTIFICATION

School Bus Manufacturer:	Blue Bird Body Company	
School Bus Model:	Micro Bird	
Build Date:	12/08	
Incomplete Vehicle Manufactured By:	Ford	
Build Date for Bus Chassis:	10/08	
School Bus GVWR (kg):	4,356 kg / 9,600 lbs	
School Bus GAWR Front (kg):	1,838 kg / 4,050lbs	
School Bus GAWR Rear (kg):	2,760 kg / 6,084 lbs	
School Bus VIN:	1FDDE35L19DA17396	
No. of Designated Seating Positions (DSP) including Driver:	17	
School Bus NHTSA No.:	C90902	
Bus Body Color:	Yellow	
Engine Displacement	5.4L	
No. of Cylinders:	8	
Fuel Pump Actuation:	Electrical Pump "ON" with ignition	
School Bus Width (mm):	2150	
School Bus Length (mm):	5916	
Bus Unloaded Vehicle Weight (UVW) (kg):	3202	
Bus Occupant Load:	864 kg - Passenger 68 kg - Driver 932 kg - Total	
Target Bus Test Weight (SBTW) (kg):	3416	
Actual (SBTW) (kg):	3410	
School Bus Tire Manufacturer:	Hankook	
	Front	Rear
Rec. Cold Tire Inflation Pressure (kpa):	379	551
Tire Size:	LT245/75R16	LT245/75R16
Load Range:	E	E

DATA SHEET 1 (CONTINUED)**SCHOOL BUS DATA**

Test Vehicle: **2009 BLUE BIRD MICRO BIRD SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C90902**
Test Date: **06/09/2009**

GENERAL VEHICLE IDENTIFICATION**SCHOOL BUS ATTITUDE**

	Units	LF	RF	LR	RR
Pre-Test:	mm	905	908	827	827

FUEL TANK CAPACITY INFORMATION


Fuel Tank Capacity (liters):	132.5
Tank Test Volume (liters):	123.0

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)*		
		Front	Rear	Total	Front	Rear	Total
Left	kg	694	889		714	1008	
Right	kg	700	919		683	1005	
Ratio	%	43.5	56.5		41.0	59.0	
Totals	kg	1394	1808	3202	1397	2013	3410

COMMENTS: NONE

Recorded By: 

Approved By: 

DATE: 06/16/2009

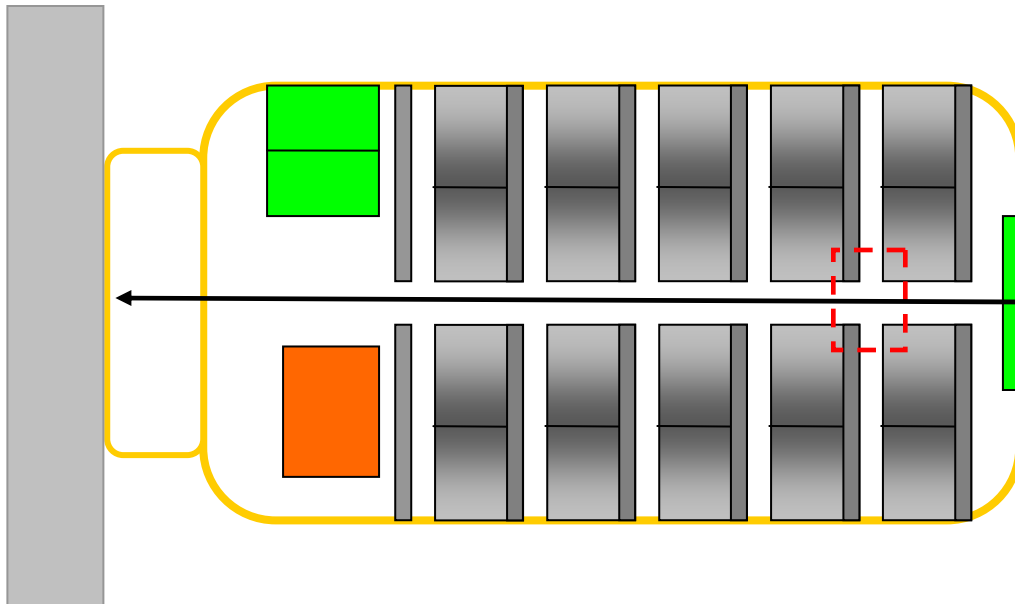
DATA SHEET 2
SCHOOL BUS IMPACT DATA

Test Vehicle: **2009 BLUE BIRD MICRO BIRD SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C90902**
Test Date: **06/09/2009**

Time of Impact:	12:04 PM
Ambient Temperature (°C)	21
Barrier Velocity – Speed Trap 1 (kph):	29.5
Barrier Velocity – Speed Trap 2 (kph):	29.5

INDICATE IMPACT POINT BELOW:



LEGEND: Red dotted line indicates location of fuel tank
Arrow indicates point and angle of barrier impact (C_L of arrow coincides with C_L of monorail).

DATA SHEET 2 (CONTINUED)**SCHOOL BUS IMPACT DATA**

Test Vehicle: **2009 BLUE BIRD MICRO BIRD SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C90902**
Test Date: **06/09/2009**

Fuel Spillage Noted:	No
Failure, if applicable:	None

Stoddard Solvent Spillage Measurements

Timeframe	Description	Allowable Spillage (ounce)	Measured Spilled (ounce)	Results
$T_0 - T_1$	Time Zero to Cessation of Motion	31 grams (1 ounce)	0	PASS
$T_1 - T_2$	Cessation of Motion to 5 minutes after Cessation of Motion	156 grams (5 ounces)	0	PASS
$T_2 - T_3$	5 Minutes after Cessation of Motion to 30 minutes after Cessation of Motion	28 grams (1 ounce) per minute 775 grams (25 ounces) Total Allowed	0	PASS

COMMENTS: None

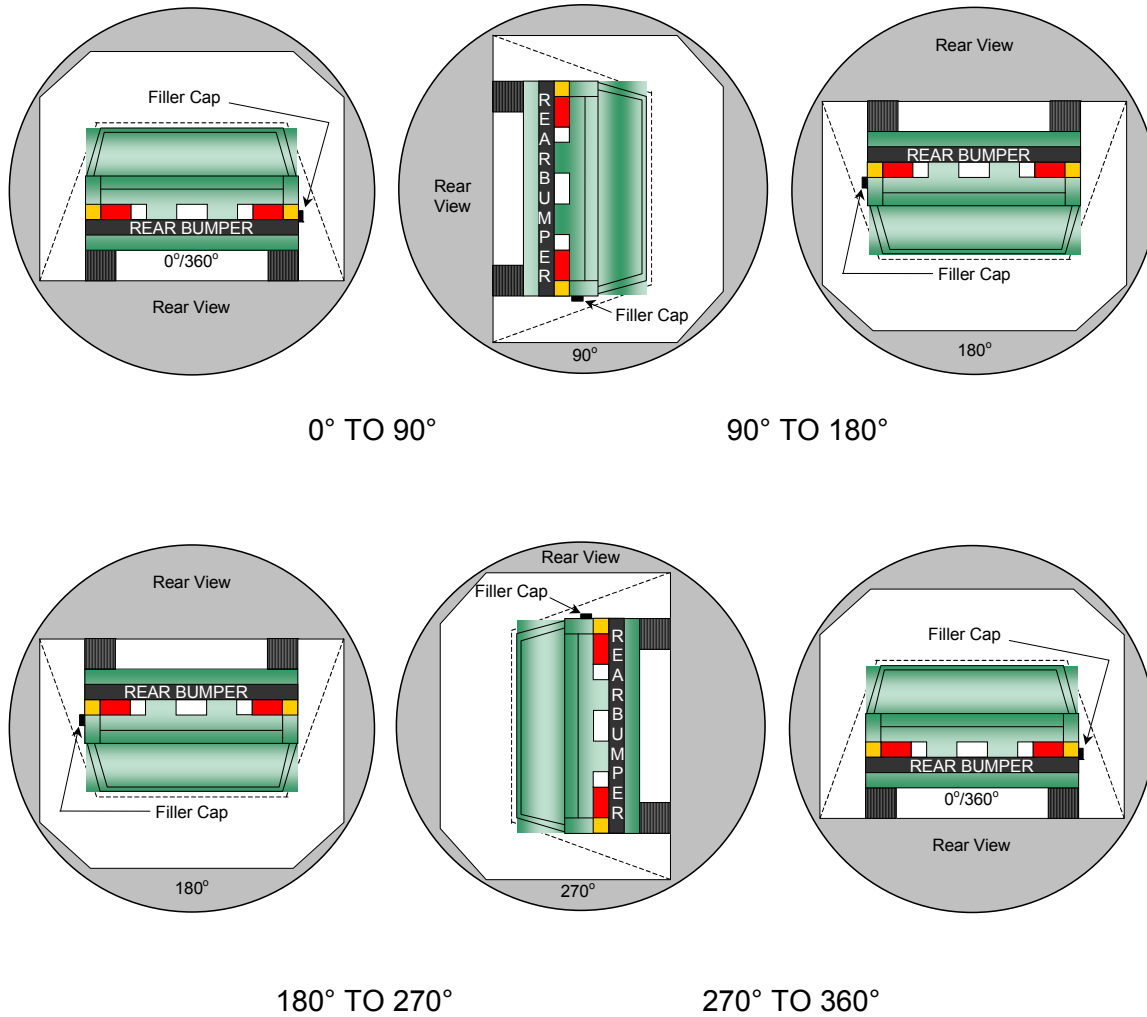
Recorded By: Eva Leebauer

Approved By: Michael Janoy

DATE: 06/16/2009

DATA SHEET 3

FMVSS 301 STATIC ROLLOVER DATA



1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard Solvent spillage locations:

Test Phase	Rotation Time (sec)	Hold Time (sec)	Spillage (oz)
0° TO 90°	160	300	0
90° TO 180°	134	300	0
180° TO 270°	147	300	0
270° TO 360°	152	300	0

SECTION 3

INSTRUMENTATION AND EQUIPMENT LIST

Test Vehicle: **2009 BLUE BIRD MICRO BIRD SCHOOL BUS**
Test Lab: **MGA RESEARCH CORPORATION**

NHTSA No.: **C90902**
Test Date: **06/09/2009**

Equipment	Description	Serial No.	Cal. Date	Next Cal. Date
Counter/Timer	Newport	5140023	03/27/09	09/27/09
Counter/Timer	Newport	5270452	03/27/09	09/27/09
Vehicle Scales	GSE	004804	09/09/08	09/09/09
Tape Measure	Stanley	33-428	11/11/08	05/11/09

SECTION 4 PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

<u>No.</u>		<u>Page No.</u>
1	Certification Label	11
2	Incomplete Vehicle Label	12
3	Tire Placard	13
4	Pre-Test Front View of School Bus	14
5	Post-Test Front View of School Bus	15
6	Pre-Test Left Side View of School Bus	16
7	Post-Test Left Side View of School Bus	17
8	Pre-Test Right Side View of School Bus	18
9	Post-Test Right Side View of School Bus	19
10	Pre-Test Rear View of School Bus	20
11	Post-Test Rear View of School Bus	21
12	Pre-Test Right Front $\frac{3}{4}$ View of School Bus	22
13	Post-Test Right Front $\frac{3}{4}$ View of School Bus	23
14	Pre-Test Left Front $\frac{3}{4}$ View of School Bus	24
15	Post-Test Left Front $\frac{3}{4}$ View of School Bus	25
16	Pre-Test Right Rear $\frac{3}{4}$ View of School Bus	26
17	Post-Test Right Rear $\frac{3}{4}$ View of School Bus	27
18	Pre-Test Left Rear $\frac{3}{4}$ View of School Bus	28
19	Post-Test Left Rear $\frac{3}{4}$ View of School Bus	29
20	Pre-Test Fuel Filler Cap	30
21	Post-Test Fuel Filler Cap	31
22	Pre-Test Fuel Tank	32
23	Post-Test Fuel Tank	33
24	Pre-Test Driver Dummy Left Side View	34
25	Post-Test Driver Dummy Left Side View	35
26	Pre-Test Driver Dummy Left Side View (door open)	36
27	Post-Test Driver Dummy Left Side View (door open)	37
28	Pre-Test Front Underbody View	38
29	Post-Test Front Underbody View	39
30	Pre-Test Mid Underbody View	40

<u>No.</u>		<u>Page No.</u>
31	Post-Test Mid Underbody View	41
32	Pre-Test Rear Underbody View	42
33	Post-Test Rear Underbody View	43
34	Post-Test Vehicle Damage Right Front	44
35	Post-Test Vehicle Damage Right Front (Close Up)	45
36	Post-Test Vehicle Damage Right Front	46
37	Post-Test Vehicle Damage Right Front	47
38	Post-Test Vehicle Damage Right Front	48
39	Rollover 90 Degrees	49
40	Rollover 180 Degrees	50
41	Rollover 270 Degrees	51
42	Rollover 360 Degrees	52
43	Ballast Weight	53

Test Vehicle: 2009 Blue Bird Micro Bird School Bus NHTSA No.: C90902
Procedure: FMVSS 301 Test Date: 6/9/09

MANUFACTURED BY

BLUE BIRD BODY COMPANY

DATE OF MFR. 12/08

SUITABLE TIRE - RIM CHOICE

GVWR: 4356 KG (9600 LB)

GAWR: FRONT 1838 KG (4050 LB) WITH LT245/75R16E TIRES
16X7.0K RIMS. AT 379 KPA (55 PSI) COLD SINGLE

GAWR: REAR 2760 KG (6084 LB) WITH LT245/75R16E TIRES
16X7.0K RIMS. AT 551 KPA (80 PSI) COLD SINGLE

THIS VEHICLE HAS BEEN COMPLETED IN ACCORDANCE WITH THE PRIOR
MANUFACTURERS' TVD, WHERE APPLICABLE. THIS VEHICLE CONFORMS TO ALL
APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS, (AND BUMPER AND
THEFT PREVENTION STANDARDS, IF APPLICABLE) IN EFFECT IN 10/08

V.I.N. 1FDDE35L19DA17396 TYPE CLASSIFICATION SCHOOL BUS

Test Vehicle: 2009 Blue Bird Micro Bird School Bus NHTSA No.: C90902
Procedure: FMVSS 301 Test Date: 6/9/09

INCOMPLETE VEHICLE MFD. BY FORD MOTOR COMPANY

DATE: 10/08	GVWR: 9600LB/ 4355KG	TIRES	TIRES
FRONT GAWR: 4050LB 1837KG	REAR GAWR: 6084LB 2760KG	RIMS	RIMS
WITH LT245/75R16E	WITH LT245/75R16E		
16x7.0K	16x7.0K		
AT 380 kPa/ 55 PSI COLD	AT 550 kPa/ 80 PSI COLD		
VIN: 1FDDE35L19DA17396			

Equipped with the Ford School Bus Prep Pkg

EXT PNT: BY RC: 86 DSO:

WB	INT TR	TP/PS	R	AXLE	TR	SPR
138	AE	Y	56	T	RR44	ULN

MADE IN U.S.A.

▽ 5U5A-3520472-AA

Incomplete Vehicle Label

Test Vehicle: 2009 Blue Bird Micro Bird School Bus NHTSA No.: C90902
Procedure: FMVSS 301 Test Date: 6/9/09

TIRE AND LOADING INFORMATION

SEATING CAPACITY TOTAL 17 FRONT 1 REAR 16

The combined weight of occupants and cargo should never exceed 1099 kg or 2423 lbs.

TIRE	SIZE	COLD TIRE PRESSURE
FRONT	LT245/75R16E	379 KPA. 055 PSI
REAR	LT245/75R16E	551 KPA. 080 PSI
SPARE	LT245/75R16E	379 KPA. 055 PSI

SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION

1FDDE35L19DA17396

Tire Placard

Test Vehicle: 2009 Blue Bird Micro Bird School Bus NHTSA No.: C90902
Procedure: FMVSS 301 Test Date: 6/9/09



Pre-Test Front View of School Bus

Test Vehicle: 2009 Blue Bird Micro Bird School Bus NHTSA No.: C90902
Procedure: FMVSS 301 Test Date: 6/9/09



Post-Test Front View of School Bus

Test Vehicle: 2009 Blue Bird Micro Bird School Bus NHTSA No.: C90902
Procedure: FMVSS 301 Test Date: 6/9/09



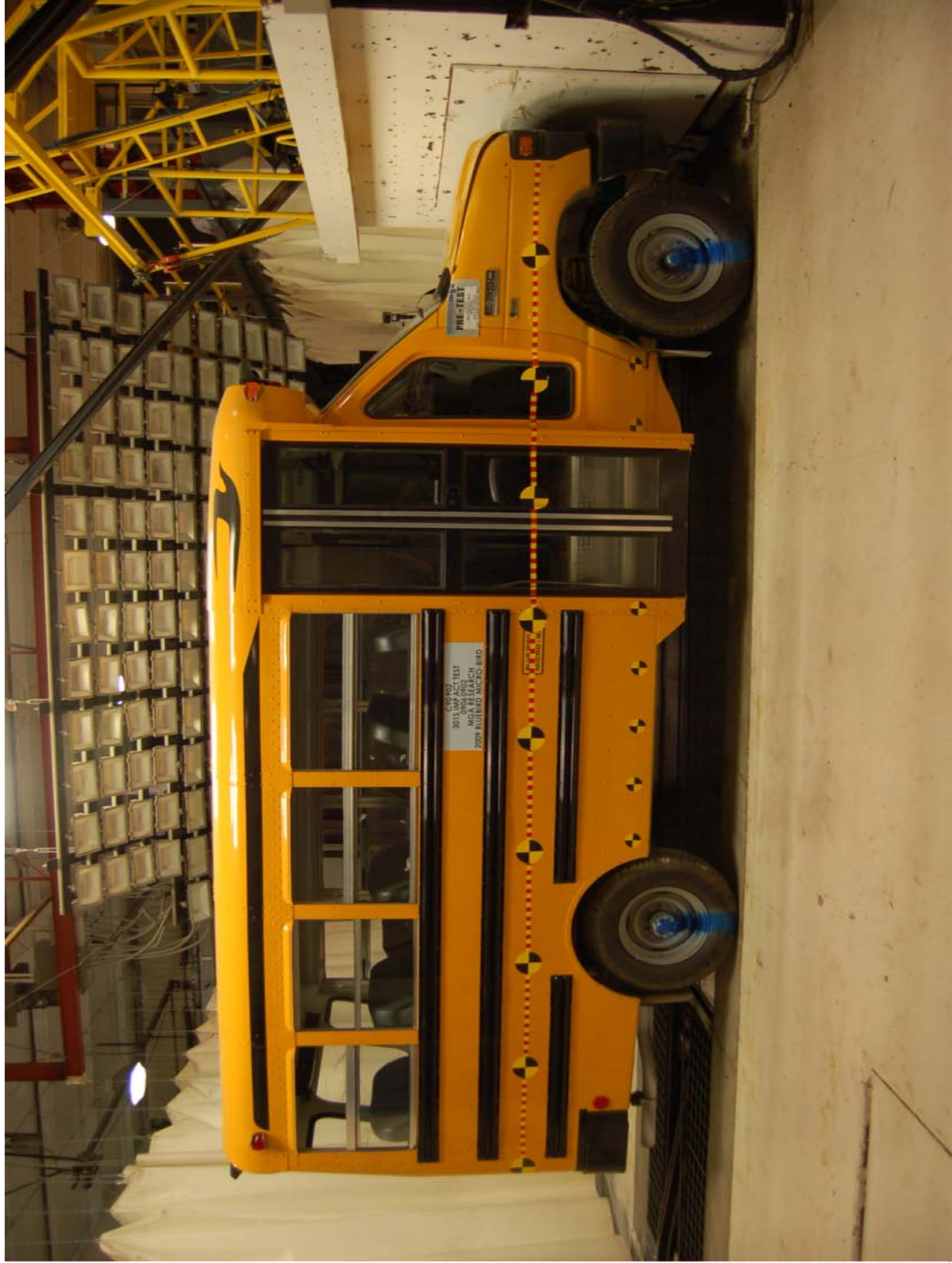
Pre-Test Left Side View of School Bus

Test Vehicle: 2009 Blue Bird Micro Bird School Bus NHTSA No.: C90902
Procedure: FMVSS 301 Test Date: 6/9/09



Post-Test Left Side View of School Bus

Test Vehicle: 2009 Blue Bird Micro Bird School Bus NHTSA No.: C90902
Procedure: FMVSS 301 Test Date: 6/9/09



Pre-Test Right Side View of School Bus

Test Vehicle: 2009 Blue Bird Micro Bird School Bus NHTSA No.: C90902
Procedure: FMVSS 301 Test Date: 6/9/09



Post-Test Right Side View of School Bus

Test Vehicle: 2009 Blue Bird Micro Bird School Bus NHTSA No.: C90902
Procedure: FMVSS 301 Test Date: 6/9/09



Pre-Test Rear View of School Bus

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301
NHTSA No.: C90902
Test Date: 6/9/09



Post-Test Rear View of School Bus

Test Vehicle: 2009 Blue Bird Micro Bird School Bus NHTSA No.: C90902
Procedure: FMVSS 301 Test Date: 6/9/09



Pre-Test Right Front $\frac{3}{4}$ View of School Bus

Test Vehicle: 2009 Blue Bird Micro Bird School Bus NHTSA No.: C90902
Procedure: FMVSS 301 Test Date: 6/9/09



Post-Test Right Front Front $\frac{3}{4}$ View of School Bus

Test Vehicle: 2009 Blue Bird Micro Bird School Bus NHTSA No.: C90902
Procedure: FMVSS 301 Test Date: 6/9/09



Pre-Test Left Front $\frac{3}{4}$ View of School Bus

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301
NHTSA No.: C90902
Test Date: 6/9/09



Post-Test Left Front 3/4 View of School Bus

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301
NHTSA No.: C90902
Test Date: 6/9/09



Pre-Test Right Rear $\frac{3}{4}$ View of School Bus

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301

NHTSA No.: C90902
Test Date: 6/9/09



Post-Test Right Rear $\frac{3}{4}$ View of School Bus

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301

NHTSA No.: C90902
Test Date: 6/9/09



Pre-Test Left Rear $\frac{3}{4}$ View of School Bus

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301
NHTSA No.: C90902
Test Date: 6/9/09



Post-Test Left Rear $\frac{3}{4}$ View of School Bus

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301

NHTSA No.: C90902
Test Date: 6/9/09



Pre-Test Fuel Filler Cap

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301
NHTSA No.: C90902
Test Date: 6/9/09



Post-Test Fuel Filler Cap

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301

NHTSA No.: C90902
Test Date: 6/9/09



Pre-Test Fuel Tank

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301

NHTSA No.: C90902
Test Date: 6/9/09



Post-Test Fuel Tank

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301

NHTSA No.: C90902
Test Date: 6/9/09



Pre-Test Driver Dummy Left Side View

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301

NHTSA No.: C90902
Test Date: 6/9/09



Post-Test Driver Dummy Left Side View

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301

NHTSA No.: C90902
Test Date: 6/9/09



Pre-Test Driver Dummy Left Side View (door open)

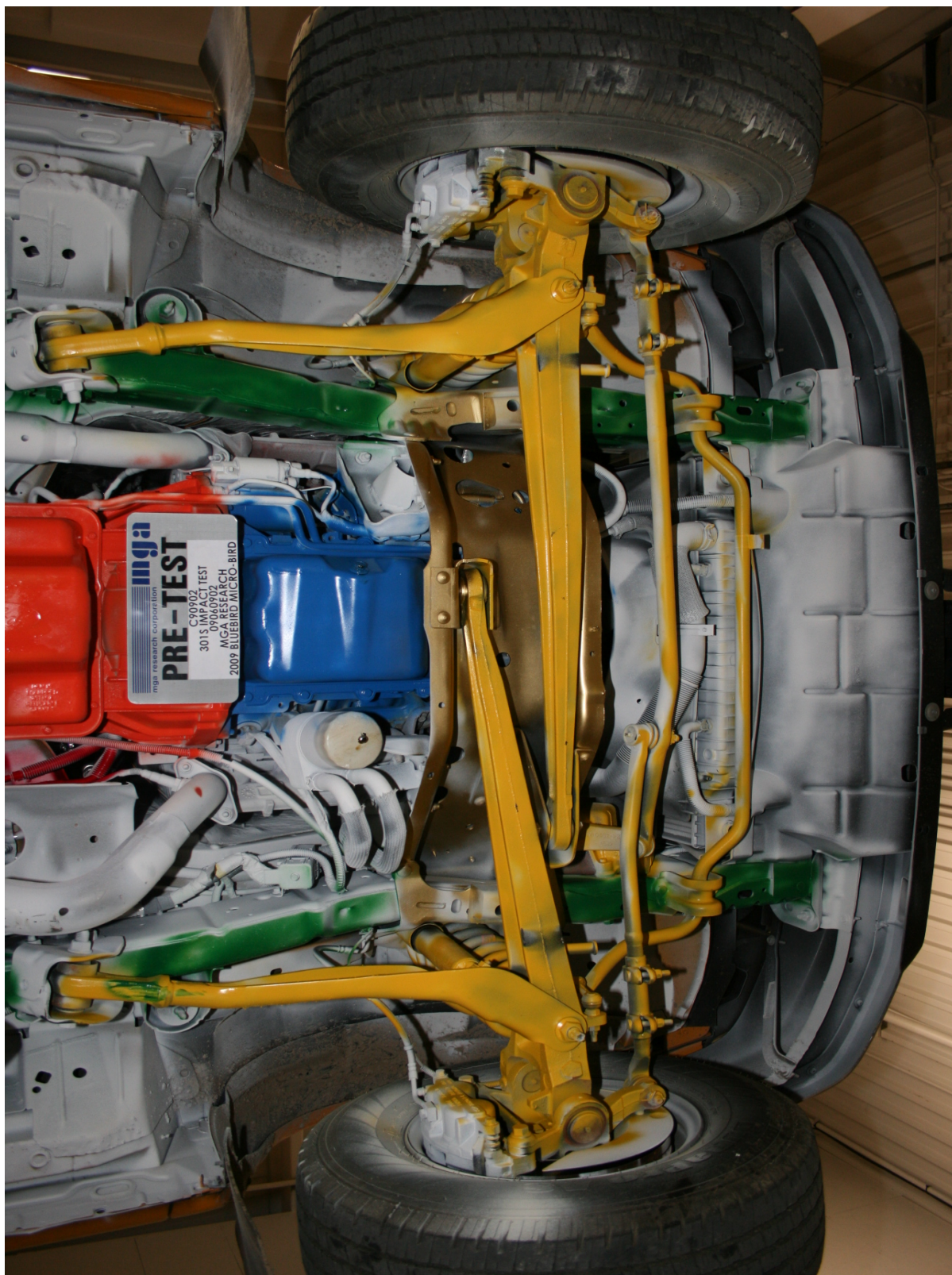
Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301
NHTSA No.: C90902
Test Date: 6/9/09



Post-Test Driver Dummy Left Side View (door open)

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301

NHTSA No.: C90902
Test Date: 6/9/09



Pre-Test Front Underbody View

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301

NHTSA No.: C90902
Test Date: 6/9/09



Post-Test Front Underbody View

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301
NHTSA No.: C90902
Test Date: 6/9/09



Pre-Test Mid Underbody View

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301
NHTSA No.: C90902
Test Date: 6/9/09



Post-Test Mid Underbody View

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301

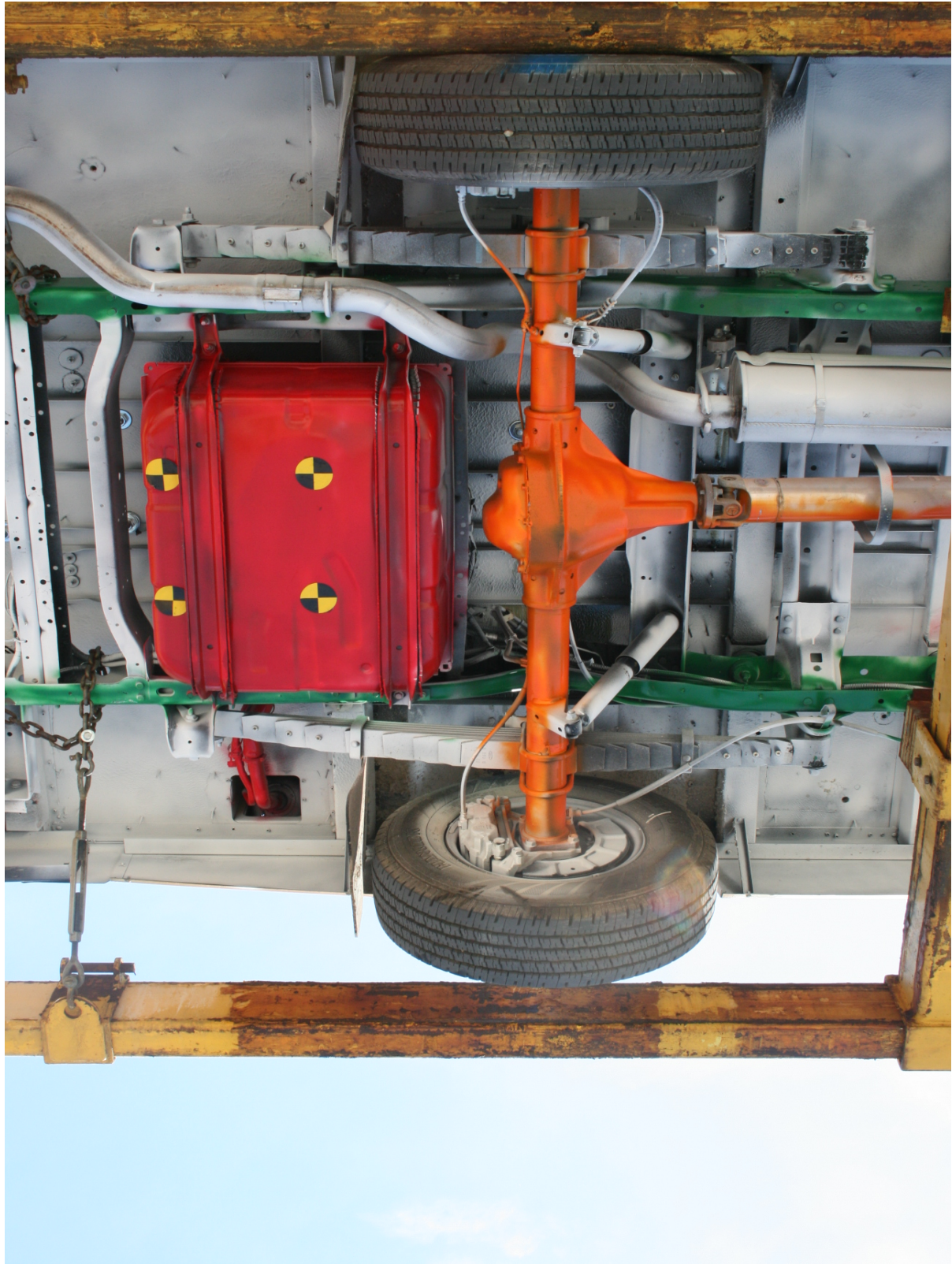
NHTSA No.: C90902
Test Date: 6/9/09



Pre-Test Rear Underbody View

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301

NHTSA No.: C90902
Test Date: 6/9/09



Post-Test Rear Underbody View

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301

NHTSA No.: C90902
Test Date: 6/9/09



Post-Test Vehicle Damage Right Front

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301
NHTSA No.: C90902
Test Date: 6/9/09



Post-Test Vehicle Damage Right Front (Close Up)

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301
NHTSA No.: C90902
Test Date: 6/9/09



Post-Test Vehicle Damage Right Front

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301

NHTSA No.: C90902
Test Date: 6/9/09



Post-Test Vehicle Damage Right Front

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301
NHTSA No.: C90902
Test Date: 6/9/09



Post-Test Vehicle Damage Right Front

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301

NHTSA No.: C90902
Test Date: 6/9/09



Rollover 90 Degrees

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301

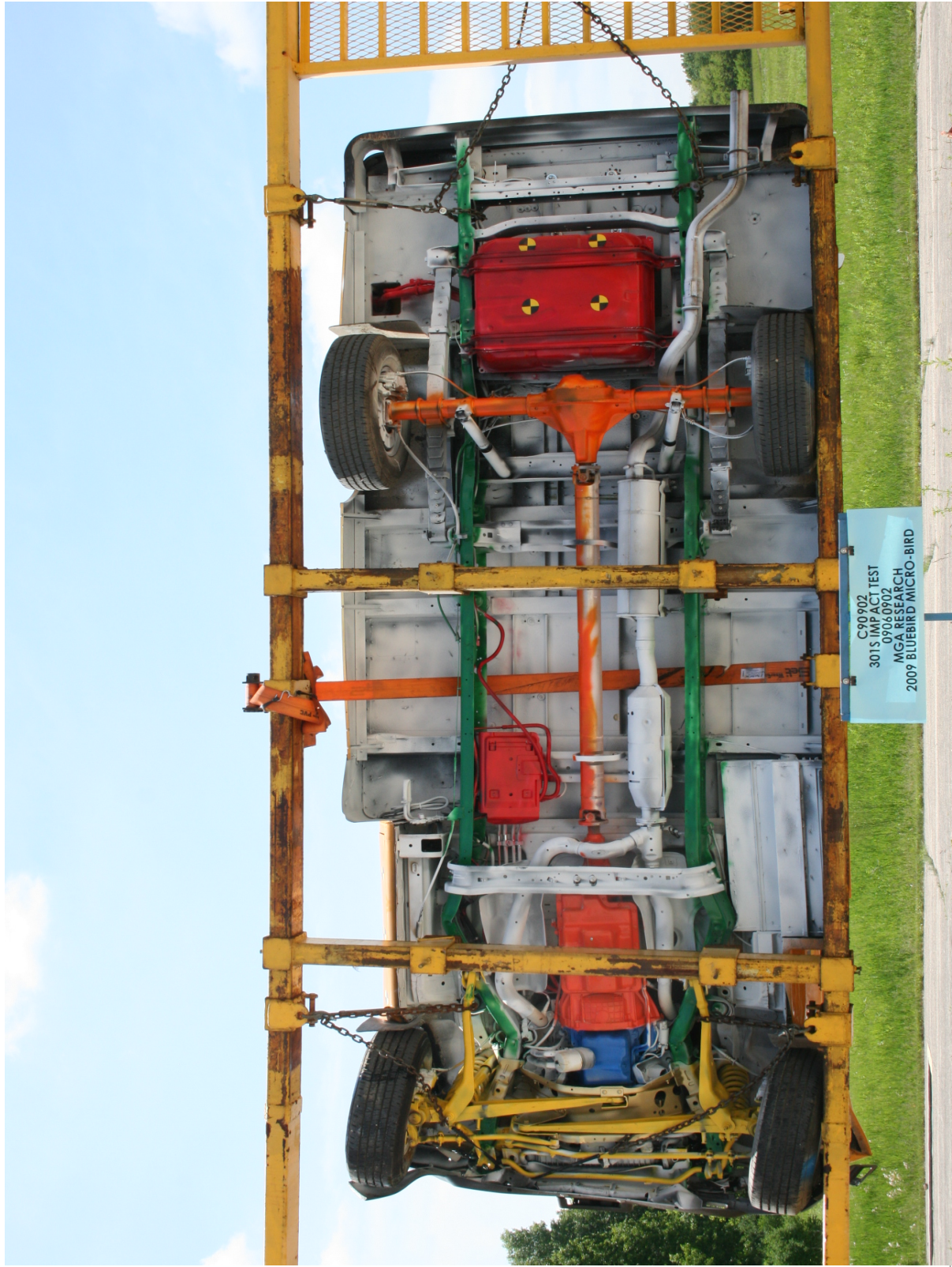
NHTSA No.: C90902
Test Date: 6/9/09



Rollover 180 Degrees

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301

NHTSA No.: C90902
Test Date: 6/9/09



Rollover 270 Degrees

Test Vehicle: 2009 Blue Bird Micro Bird School Bus NHTSA No.: C90902
Procedure: FMVSS 301 Test Date: 6/9/09



Rollover 360 Degrees

Test Vehicle: 2009 Blue Bird Micro Bird School Bus
Procedure: FMVSS 301
NHTSA No.: C90902
Test Date: 6/9/09



Ballast Weight